What is claimed is:

1. An interferometer comprising:

a laser system that produces a heterodyne beam including a first frequency component having a first polarization and a second frequency component having a second polarization;

a coated polarizing beam splitter oriented so that the heterodyne beam has a non-zero incidence angle with the polarizing beam splitter, the coated polarizing beam splitter splitting the heterodyne beam into a first beam and a second beam respectively having the first and second frequencies; and

interferometer optics that generate measurement and reference beams from the first and second beams.

2. The interferometer of claim 1, wherein the non-zero incidence angle is an angle corresponding to a peak in the extinction ratio of a reflected beam in the polarizing beam splitter.

3. The interferometer of claim 1, further comprising a beam combiner positioned to receive the first and second beams and provide a recombined heterodyne beam to the interferometer optics.

4. The interferometer of claim 3, wherein the beam combiner comprises a coated polarizing beam splitter and is oriented to receive the first and second beams at non-zero incidence angles.

5. The interferometer of claim 4, wherein the non-zero incidence angles correspond to a peak in the extinction ratio of a reflected beam in the polarizing beam splitter.

6. An optical element comprising:

a first piece of glass;

a second piece of glass; and

a beam splitter coating between the first and second pieces of glass, wherein the optical element is oriented to receive an input beam at a non-zero incident angle

with a normal to a surface of the first piece of glass.

7. The optical element of claim 6, wherein the non-zero incident angle corresponds to a peak extinction ratio for a beam reflected from the beam splitter coating.

8. The optical element of claim 6, wherein the first and second pieces of glass are prisms with cross-sections that are triangles including a right angle and a 45° angle.

9. The optical element of claim 6, wherein the optical element is a polarizing beam splitter.

10. The optical element of claim 6, wherein the optical element is a beam combiner.

11. A method for aligning an optical element containing a polarizing beam splitter coating, comprising:

directing an input beam along a first axis into the optical element;

rotating the optical element to change a yaw angle of incidence of the input beam;

observing a reflected beam resulting from reflection of a portion of the input beam from the polarizing beam splitter coating; and

mounting the optical element at the yaw angle that the observing indicates provides a best extinction ratio for the reflected beam.

12. The method of claim 11, wherein observing the reflected beam comprises:

placing in a path of the reflected beam a polarizer having a polarization axis orthogonal to a desired polarization of the reflected beam; and

measuring light intensity passing through the polarizer.

13. The method of claim 11, further comprising:

rotating the optical element to change a roll angle of incidence of the input beam;

observing a transmitted beam resulting from a portion of the input beam passing through the polarizing beam splitter coating; and

mounting the optical element at the roll angle that the observing of the transmitted beam indicates minimizes presence of a first frequency in the transmitted beam.

14. The method of claim 11, further comprising rotating the optical element to change a pitch angle of incidence of the input beam and adjust a path of a beam resulting from a portion of the input beam reflected by the polarizing beam splitter coating.

15. The method of claim 11, wherein the optical element is an element selected from the group consisting of a polarizing beam splitter and a beam combiner.